



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,354	11/17/2003	Satoshi Tange	023971-0341	3155
22428	7590	10/19/2007		
FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER BEHNCKE, CHRISTINE M	
			ART UNIT 3661	PAPER NUMBER
			MAIL DATE 10/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/713,354

Applicant(s)

TANGE ET AL.

Examiner

Christine M. Behncke

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 and 06 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some * c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the Amendment and Remarks filed 6 July 2007, wherein claims 1-12 were presented for examination.

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Double Patenting

Claims 1, 8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 19 of U.S. Patent No. 6,973,380. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application are broader and fully encompass the patented claims.

Claims 1, 8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 18 and 19 of U.S. Patent No. 6,970,777. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application are broader and fully encompass the patented claims.

Claims 1, 8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 17 and 18 of U.S. Patent No. 6,732,021. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application are broader and fully encompass the patented claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon, US 6,487,501, in view of Matsuda, US 6,216,079.

(1, 4, 8, 9, and 12) Jeon describes a system for preventing the deviation of a vehicle comprising: a lane detecting device that detects a running lane of the vehicle (figure 4); a running condition detecting device that detects a running condition of the vehicle (figure 2); a deviation judging device that judges based on the detected running lane and the detected running condition of the vehicle whether the vehicle has a tendency to deviate from the running lane (step 150, figure 6); a vehicle behavior control device that controls a behavior of the vehicle so as to iteratively control the vehicle to prevent the vehicle from deviating from the running lane in accordance with the detected running condition when the deviation judging device judges that the vehicle has a tendency to deviate from the running lane (steps 150-230, figure 6); and wherein the lane detecting device detects the running lane of the vehicle based on a variation in a running direction of the vehicle due to the corrective control of the vehicle by the vehicle behavior control device in a prior iteration (column 2, lines 25-60). Jeon does not teach that creating a yaw moment controls the corrective behavior of the vehicle.

However, Matsuda teaches an under and over steering correction control device that

determines the shape of the road and iteratively generates a yaw moment in the direction to prevent the vehicle from deviating from the running lane in accordance with the detected shape of the curve (figure 4). Further Matsuda teaches that in creating a yaw moment, a braking/driving force control amount calculating device that calculates a braking/driving force control amount of each wheel of the vehicle so as to generate the yaw moment in the direction to prevent the vehicle from deviating from the running lane (figure 5) and a braking/driving force control device that controls a braking/driving force of each wheel of the vehicle in accordance with the calculated braking/driving force control amount (figures 1 and 2).

(Claims 2 and 10) Jeon further teaches wherein a steering condition parameter detecting device detects a steering condition parameter (figures 2 and 3), wherein the lane detecting device corrects the detected steering condition parameter by a steering condition parameter equivalent to the needed correction vehicle behavior control device value and detects the running lane based on the corrected steering condition parameter (figures 5 and 6).

(Claims 3 and 11) Jeon further describes a steering angle sensor for detecting a steering angle of a steering wheel (figure 2), wherein the lane detecting device corrects the detected steering angle by a steering angle equivalent to the required correction value to prevent lane deviation generated by the vehicle behavior control device (figure 3) and detects the running lane based on the corrected steering angle (column 5, line 52-column 6, line 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the system and methods of Jeon with the teachings of Matsuda because the generation of a yaw moment and the influence of the steering angle are both means of preventing the deviation from the lane and as Matsuda suggests the control of the yaw moment to prevent the under or over steering events allows the vehicle to smoothly and without overly disturbing the driver prevent the deviation (column 5, lines 10-21).

(Claim 5) Jeon further describes wherein the deviation judging device judges that the vehicle has a tendency to deviate from the running lane when an absolute value of an estimated lateral displacement in future is equal to or larger than a lateral displacement limit value (column 5, lines 16-38).

(Claim 6) Jeon further describes wherein the estimated lateral displacement in future is an estimated lateral displacement of the vehicle from a center of the running lane after a headway time (column 5, lines 16-38, column 6, lines 45-57).

(Claim 7) Jeon further describes wherein the lateral displacement limit value is a value offset of the allowable offset from the deviation of the center of the lane (column 3, lines 28-45, but does not specify that the offset value is found by subtracting a half of a width of the vehicle from a half of a width of the running lane. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the offset value of Jeon with the difference in offset from the lane to the vehicle in order to accurately calculate the allowable deviation from the center of the lane depending on the size/width of the vehicle.

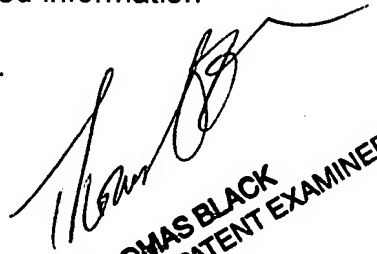
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on 8:30 am- 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB


THOMAS BLACK
SUPERVISORY PATENT EXAMINER